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Inaugural Essay

On External Applications.

For the degree of Doctor of Medicine,
in the University of Pennsylvania?

By

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Philadelphia?

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The period of the first application of medicine to the external surface of the body, must have been very remote. The practice is probably to be ranked among the first attempts that were made in the early infancy of our science towards the removal of disease. At a time when chemistry had not yet disclosed to us the various preparations and combinations of medicines, and experience had not yet ascertained the effect or the dose of the active vegetables, medical prescriptions must necessarily have been confined to external applications. Accident may have first suggested their utility; for instance, the successful practice of applying wounded cotton to superficial burns, was but lately discovered by the merest accident.

The relief afforded in febrile head-ache by the application of cold water, or of a cool green leaf; the alleviation of pain in other parts of the body by the application of blisters, warm

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fomentations, sinapisms, frictions &c must all have tended to the confirmation and continuance of the practice.

If we for a moment, direct our attention to the remedies of those people who have made but little or no improvement in the medical art, we shall find them to consist chiefly of such articles as relate to external applications.

In proportion however as the number of our medicines has increased by the wide spread investigations of chemistry, repeated experience, and accident, the manner of administering them, has also undergone a material change.

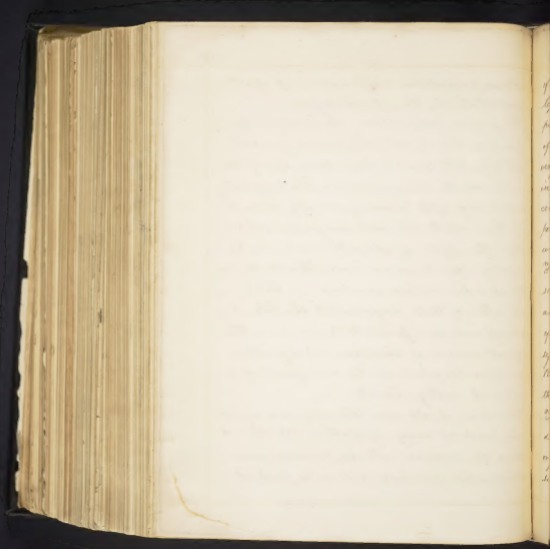
At the present day external applications instead of being limited to local affections, to certain parts of the body, or to certain stages of particular diseases, have acquired a more extensive confidence; and we are happy to learn that they are growing into favour more and more every day. The practice of applying remedies externally,

is founded on cutaneous sympathy; or in other words, on the intimate connection of the skin or external surface of the body, with all the internal organs; and in fact with every part of the system. Let us now endeavour to prove this intimate connexion between the skin or external surface and the internal organs.

There are various incidents in life, and many familiar phenomena, both in health and disease, by which it is clearly illustrated. Every one must be familiar with the languor and debility, and the indescribable unpleasant feelings, during a hot summer day; and on the contrary, observe the vivacity of spirits, and the lively activity of the body, on the return of a cool and refreshing evening. "On this connexion" observes a writer "depends that pleasing though indescribable sensation, which every one must have experienced from a change of linen and fresh garments." It is the extension of this connexion in a state of health.

to the mental part of our frame which has long since made the colour of the countenance an index of the disposition; and while the blooming lively countenance has been considered as the attendant of a generous and open temper, the pale livid complexion has been received as the mark of one that is cold, selfish, and contracted."

There are a great variety of agents which display manifest morbific effects upon the general system, such as, heat, cold, moisture &c each of which has its peculiar modifications. Let us first notice the effect of a change of climate from a cold to a warm temperature. The first effect manifested by a change of climate seems to be upon the skin & capillary circulation. Thus a person going from a temperate climate towards the tropics (the West Indies for instance) has the action of his skin reduced considerably below that of the natives. Thus causing a relaxation of the surface, general debility of the system, torpidity of the



cutaneous circulation, which more or less affect
sympathetically the internal organs.

The profuse perspirations arise on the effect
of a hot climate not only having general
activity, but seem to have some specific
action on the history of action. The perspiration
and urinary organs become gradually weakened
by their inordinate and irregular action,
from the effect of atmospheric heat,
causing sometimes an increased and some-
times a diminished secretion of urine;
in either of these irregularities the bile is
always more or less vitiated; and hence the
great number of diarrhoeas and dysenteric
complaints, which are the consequence of a
hot and sultry climate.

The action of cold, when the cutaneous organ
also becomes more sympathetically affected, and
hence the numerous catarrhs, pneumonias, and
rheumatic affections, which are the product



4. solid. The intercalarys of a not-ribose suffer
less from cold, for a time, after being trans-
ported to a northern winter, than the natives
of it does. Hence we can readily account for a
very curious phenomenon, that Southern students
in Providence can withstand the intensely
cold weather better than the natives or even
borns from a more northern latitude;
which was to me at first a very curious fact.
The cold here acts at a stimulus upon the
skin which was before unaccustomed to its
action, and from the intensest commotion
is that organ with the rest of the body the whole
system is invigorated. A resistance of two or
three winters would reduce the action of
the skin too far with that of the natives.
The action of cold upon the general system
does not seem to be confined to any particular
organ or tissue; but the mucous membrane
seems to be most commonly affected by it.



"But in our present country says "if the
 skin and the internal organs were always
 kept at the same degree of excitement by the
 constant uniformity of the climate, they
 would certainly be a much less fruitful
 source of disease." But it is a proof of their
 very frequency directs our attention to the
 "feels in skin which is hardly ever sick,
 because all the external causes which act
 upon its morbid and exuberant sensitivity
 are very unfrequent." In another place
 he very correctly observes "that society has also
 multiplied to a great extent the injurious
 excitements to which the skin is subjected.
 These excitements consist especially in the rapid
 passage from heat to cold. In the natural state
 there is only the succession of the seasons; nature
 knows how to correct insensibly heat with cold,
 and to make the transition but rarely abrupt.
 But in society the artificial degrees of temper



ture of our abasements, degrees differing at first from that of the atmosphere; then varying greatly from each other, so that the same man who in winter enters thirty apartments is often subjected to thirty different "impressions." And it may add with tolerable safety, to thirty chances of contracting a disease.

The action of cold upon the cutaneous organ produces many sympathetic effects, especially if subjected to its action when we are sweating, thus diverting the course of the fluids from the surface towards the internal organs, causing sometimes either a relaxation diarrhoea, or at other times an impoisonment of the internal organs, which is seldomly without inflammation. The skin exercises sympathetically great influence over the mucous system; for the one is a mere continuation of the other. Who does not know that the production of most catarrhs is often the sudden consequence of the action of cold on



the cutaneous organs. A slight separation from the usual quantity of drops or bed covering will often occasion a catarrh or a pleurisy.

So intimate, in fact, is this connection that an unusual, though apparently a very innocent interference will produce sometimes a very alarming disease.

The serous membranes are also in a great degree subservient to the sympathetic influence of the skin, for instance, a pleurisy is caused by the direct action of cold on the system, the blood is drawn from the external surface towards the internal organs, and the vessels of the pleura, instead of returning their natural fluid, (the serum,) are compelled to admit the red blood which is an unnatural stimulus, and thus inflammation supervenes.

What effect has moisture on the system in producing disease? The temporary accumulation of damp either on sleeping or damp beds or rooms.



are almost too obvious to need a description. The
concurrent catarrhs which can always be traced
to morbid action in some way or other to
the body, well sufficiently warrant us in supposing
that it is a very frequent source of disease.

There are some conspicuous parts of the body which
have a tendency to be more easily affected, as
they are more susceptible the incident of disease
than any others. The feet appear to suit this
character in preference to all others. In fact,
it is true, and so certain is this observation
verified, that wet feet and a bad cold
amongst the vulgar are synonymous terms.
The ovaries, the feet seem to exercise a very
direct and immediate influence over the organic
conditions of the uterus. And, indeed, looking for
them and not for the feet, they are too well aware of
this immediate connection, for 'tis not unpropor-
tionally so by them deranged, in substitution
of what I say, I have only time to recollect a few



lost from Dr. Smeat's truly excellent work, which are hitherto abstracted to our sat. int. However well established the menstrual discharge may be, it is liable from a variety of causes independently of pregnancy and suckling, to be interrupted. The little report which you give gives us, for this period, exposes them, but too frequently to a derangement of it, nay some we have known, so hurried as to require us to administer them by putting their feet in cold water when engaged for a party of pleasure."

Having thus seen some of the various relations various parts of the body, and the more we know about the their power, it is almost to the great system, of various and various, it is not, may we not say, a "plan," that nature has, that these various, and other for the purpose of bearing, and many, there for the purpose of bearing. It is not all the circumstances were mentioned.



fully demonstrate the utility and the absolute necessity of applying remedies alternately: there are various instances which clearly tend to substantiate our position, some of which it may not be unimportant for us to mention.

The celebrated Linnæus relates a instance ^{of} of two dysenteric patients in the same ward at an infirmary in Edinburgh, who quarrelled, and refused to settle their disputes by severely punishing each other, which they did for a considerable time; both of them were better afterwards. This is not a very desirable remedy, but, however, it seems to answer our present purpose. If the skin had been excited by any other stimulus than the whip, the effect perhaps would have been the same.

Bohat mentions a case of a woman at the Hotel Dieu in Paris, who was seized with convulsions and continued vomiting from a sudden suppression of her menses, almost every



usually that even resorted to without effect.
Finally he entered the national as he used in
a warm bath, every thing was as usual the
same at that time as at it.

Among the primitive exterior applications we
use at the present day, are blister, sinapisms,
the cold and warm bath, immobilities, &c.
some of which vary as since particularly the
blister so certainly let me to be ranked
among the most common and efficacious reme-
dies, that are in the hands of the physician.
They also want a consideration, which does not
belong to other remedies, as they are always
warranted not to injure in their action, and
hence are more extensive. They, as we have
above, must be of ancient origin, as the
treatment and to not doubt affected by their
application not over some hundred to the confir-
mation and continuance of their use.
Blister like other important remedies have



and the addresses and their length. The last addresses were continued for some time, and then we have noticed them to their present considerable confidence. Another important trait in their remedial character is that they are applicable to a greater number of different diseases than any other single remedy in the whole Materia Medica.

The studies of Ferri and of Bistess has been a subject of much speculation even among the highest authorities, each one adducing his own theory, and supporting it by very weighty and imposing arguments. The remarkable results seem to attribute more beneficial influence to the power of increasing the action of the external vessels, determining to the surface, and containing in position those which are retained the surface of the dishes sealed up. Others think to ascribe the good effects of Bistess to their direct depuratory or evacuating influence, and all over



that a blistered surface may be converted in the light of a new secretory organ. I have again now endeavored to explain their operation by ascribing it to the establishment of a new action, in the part. Each of these applications in combination with the sympathy of the external surface and the internal organs, especially the Lungs, as to respiration we endeavored to establish in the first part of our essay will perhaps afford a partial explanation of the medical effects of blisters. Be this as it may, what ever may have been their origin, or by whatever people they may have been first employed, their utility sanctioned by the practice of ages is not disproven by the test of daily experience.

The practical application of blisters as well as other remedies in the healing art is conformable to certain general and particular rules.

Blisters are not advantageous in any of the



inflammatory diseases until the system has been prepared for their use. Thus, an author very justly remarks "that vesicles cannot be applied, with advantage, nor even with safety at any period of continued fever. If they are applied during an early period when the morbid action is highly inflammatory, they cannot fail to do mischief. They simply add the mischief of their own stimulation to that under which the system is already labouring, and by that means convert the course of the action from inflammatory to the venereal disease, have even accelerated its progress, leave vesicles and scars to their ruin." The same particular cases when there is inflammation or congestion of some important vital organ, attended with danger, vesicles may prove of essential service in the beginning of disease, & accompanied with various counteractions, and other antiphlogistic measures.



Blisters have been not a little extolled in
intermittents. Dr. Robinson speaks highly in
favour of them. But his *Observations* he says,
he had seen them, in more than one instance
imperfectly applied, as a preventive of the
paroxysm, when it occurred, so that the best
instances should be put off to the anticipated
moment of attack. Even when the case is not
so striking or imminent, they are not without
utility. "The irritation which they induce being
constantly kept up, as the paroxysms will after
a time so interrupt the train of morbid affec-
tions constituting the form of fever as, by and
by to put an end to the worst cases of it. And
as they are demanded in those cases of the disease
attended by cerebral congestion, or induration
of a painful and inflammatory nature, little
indeed will be gained, until such obstructions are
removed, and with this view a sanguiferous blister
the repeated part ought never to be neglected."



Bleeds are rightly, and are all the instruments
 of affections of the alimentary canal, but it
 must be acknowledged, that never they are
 well timed as to the period of the disease.
 They are not owing directly, but indirectly, important
 in cases attended with symptoms of a local
 affection of any of the important internal organs,
 or acute humoral affections. For instance, it has
 been sometimes asserted, that there is
 inflammation of other organs. There appears
 to be a diversity of opinion on this subject. It is
 contradicted by some, that they do more mischief
 than good, when resorted to in case. The action of
 the heart and arteries has been considerably
 extended; while others allege, that there may be ad-
 vantageously obtained in the very commencement
 of the disease. There can be no doubt, however,
 but that the safest and most decided benefit
 can result from their application after exten-
 sive excitement had been reduced by debility.



measures. In relation to this point Dr. Armstrong says, "It has struck me sometimes very forcibly, that the first & sole application of blisters to the chest, when general or local blood letting is a proper & necessary measure, at least I have seen hydrothorax induced by follow it, from the increase of the general and local excitement which blisters thus applied most apparently produced."

In gastritis, and enteritis, blisters when well timed are entitled to much confidence. They serve to arrest the course in progress & to stop the current, & to direct the current at another station, by inducing a counter irritation in the viscera and thus inviting the counteraction and the train of morbid operations to that point. Blisters are much used on the rectum and on all the affections of the lower part of the large intestine in any degree of inflammation or congestion. In cases where there is a disposition to the



distinct style in which there are significant
 differences in the use of words and sentences.
 In the introduction they have passed over to the
 subject, and we find that the author has the same
 sense of writing that extracted from him.
 Some of the first sentences in the "General
 Introduction" of a subject, intended with them
 a character from which others, in some, have been
 extracted all the other reasons in the same.
 The author was found in the application of studies
 necessary to the subject of the
 "A. B. C. of the subject" and to the subject of the
 subject of the subject. The author was found to be
 related with the subject of the subject of the subject
 in appearance at all times to be an object of the
 character of the subject of the subject of the subject
 in the subject of the subject of the subject of the subject
 which can be seen from the subject of the subject of the subject
 means, and a time when it is necessary to the subject
 of the subject of the subject of the subject of the subject.



Dr Wharton informs us from his own extensive
 that this nature does not expose so much of abso-
 lute truth, as they would make us believe. There
 may, next to, however, that the appearance
 of moderate in all instances, influence strong effects
 in cases where the other appears an universal
 increase of temperature, and also a dryness
 circumstances which always deserves par-
 ticular attention, in a point of its close connec-
 tion with the natural system, which we pointed
 out in our introduction. The abolition of a
 winter has frequently been known to produce
 a slight dryness, and in a short time the
 skin appears its natural temperature and
 moisture.

In metaphysics also winter is entitled to some
 degree of consideration. The case of moderate imba-
 lity of the elements, producing a moderate con-
 traction, extreme increase, and violent con-
 traction, when other elements have failed, the abolition



is a truth not even known and undiscovered.
 Some feel some elemental misconception, there is
nothing where at the same time and place
common model of location it was known with
out in a very short time reference to the future
and the past.

The case therefore not just some local misconception
relative to the location operation of distances
where there was there is that a complexity the
regions of geography. The religion is not with
related to the matter of the past and is no more
than discussions and conclusions in the past and
but not but of possibilities and not the past.
Let us begin with known and imagined the
motion of appearing and disappearing the fact of
an inherent being.

Some ambiguity of appearance and fact exists in
the coincidence of in the past and the present to
which they are opposed. This is to be remembered
according to conventional use and the relation to the



inflammation or at least sufficient to warrant
 as a general rule, that in all local inflammations
 leeches should be applied as soon the real of
 the disease as hopeful. But when an impression
 is to be made on the general system, the extremi-
 ties are to be leeches, for venous humors out
 more. In very advanced stages of disease there
 must be avoided nearer the centre of inflama-
 tion, on account of the diminished sensibility
 of the extremities and the diminished vital
 energy, the impression will proportionably be
 diminished.

The use of leeches is sometimes supplanted by
 the application of sinapisms. These latter although
 not so extensive in their application, still deserve
 to be ranked among our most important reme-
 dies in the treatment of some particular diseases.
 Their mode of action is perhaps the same as
 that of leeches, and the benefit resulting from
 their use is obtained upon the same principle.



that is, revulsion and counter irritation.

Sinapisms are chiefly resorted to in cases of emergency, and sometimes only, for a temporary benefit. Their full effect may be displayed upon the system in a few minutes whereas blisters generally require several hours. Sinapisms are more stimulating in their nature than blisters, occasion more pain for a time, but are not attended with such ill consequences.

Sinapisms are well adapted to acute inflammations of any of the abdominal viscera. In cases of emergency when the lancet, if necessary, has failed to procure relief a sinapism over the affected part will frequently have the desired effect. They seem to be suited to diseases of a periodical occurrence, and most particularly to intermittent fever. Sinapisms to the extremities or abdomen, or both, a short time before the expected paroxysm, will frequently subvert the disease. When there is considerable inflam-

mation of the brain attended with delirium, and other alarming symptoms, and where no time is to be lost, sinapisms to the lower extremities, will be attended with happy results.

We here beg leave to quote the following sentence from Dr Daniel of Savannah.

"To a physician unaccustomed to the influence of sinapisms in the treatment of our autumnal fevers, the remark will appear almost incredible, that they frequently in a few hours relieve a patient from the most distressing restlessness: and whilst yet on him produce sound and refreshing sleep."

Having thus concluded this imperfect essay, I sincerely hope to have a critic's kind indulgence

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